CLAIMS

What is claimed is:

1. A system for communicating data signals using a spread spectrum cellular network, comprising:

a plurality of base stations coupled to the cellular network, each base station of the plurality of base stations including means for transmitting a pilot signal sequence; and

a mobile unit coupled to the cellular network and assigned to one of the plurality of base stations (active base station), the mobile unit including:

a) means for receiving a signal of another of the plurality of base stations (target base station); and

b) means for determining the interference density to the target base station from the received signal including:

i) means for synchronizing an Orthogonal code sequence with the Orthogonal code sequence boundary of the target base station's pilot sequence.

2. The system of claim 1, wherein the means for determining the interference density further includes:

means for correlating the received signal with a corresponding P/N sequence of the target base station;

means for correlating the selected Orthogonal code sequence with the P/N correlated target pilot sequence of the target base station; and

means for determining the energy of the Orthogonally correlated, P/N correlated, target pilot sequence.

3. The system of claim 2, wherein the Orthogonal code sequence is a Walsh code sequence.

4. The system of claim 3, wherein the cellular network is a CDMA based network and each base station of the plurality of base stations represents a network cell.

5. The system of claim 4, wherein the means for determining the interference density further includes means for selecting a code sequence that is at least quasi-orthogonal to the Orthogonal code sequences currently employed by the target base station where the selected code sequence is comprised of a repetition of a code sequence that is orthogonal to other code sequences currently employed by the target base station and the length of the selected code is an integer multiple of the longest Orthogonal code sequences currently employed by the target base station.

6. The system of claim 1, wherein the means for synchronizing the Orthogonal code sequence includes:

a. means for determining the Orthogonal code sequence boundary for the active base station's pilot signal; and

b. means for determining the Orthogonal code sequence boundary for the target base station's pilot signal from the determined active base station's pilot signal Orthogonal code sequence boundary.

7. The system of claim 4, the mobile unit further comprising means for determining the power of the received base station pilot signal sequence.

8. The system of claim 7, the mobile unit further comprising means for providing the ratio of the determined pilot signal power and interference density to the active base station.

9. The system of claim 1, wherein the means for determining the interference density includes:

means for correlating the received signal with a corresponding P/N sequence of the target base station;

means for correlating a pilot Orthogonal code sequence with the target base station's P/N correlated signal;

means for determining the power of the target base station's P/N correlated signal; and

means for determining the energy of the Orthogonally correlated, P/N correlated, received signal.

10. The system of claim 9, wherein the Orthogonal code sequence is a Walsh code sequence.

11. The system of claim 10, wherein the cellular network is a CDMA based network and each base station of the plurality of base stations represents a network cell.

12. The system of claim 11, wherein the means for synchronizing the Orthogonal code sequence includes:

a. means for determining the Orthogonal code sequence boundary for the active base station's pilot signal; and

b. means for determining the Orthogonal code sequence boundary for the target base station's pilot signal from the determined active base station's pilot signal Orthogonal code sequence boundary.

13. The system of claim 12, the mobile unit further comprising means for providing the ratio of the determined pilot signal power and interference density to the active base station.

14. A mobile unit for communicating data signals using a spread spectrum cellular network, the cellular network including a plurality of base stations coupled to the cellular network and the mobile unit is assigned to one of the plurality of base stations (active base station), the mobile unit comprising:

a) means for receiving a signal of another of the plurality of base stations (target base station); and

b) means for determining the interference density to the target base station from the received signal including:

i) means for synchronizing an Orthogonal code sequence with the Orthogonal code sequence boundary of the target base station's pilot sequence.

15. The mobile unit of claim 14, wherein the means for determining the interference density further includes:

means for correlating the received signal with a corresponding P/N sequence of the target base station;

means for correlating the selected Orthogonal code sequence with the P/N correlated target pilot sequence of the target base station; and

means for determining the energy of the Orthogonally correlated, P/N correlated, target pilot sequence.

16. The mobile unit of claim 15, wherein the Orthogonal code sequence is a Walsh code sequence.

17. The mobile unit of claim 16, wherein the cellular network is a CDMA based network and each base station of the plurality of base stations represents a network cell.

18. The mobile unit of claim 17, wherein the means for determining the interference density further includes means for selecting a code sequence that is at least quasi-orthogonal to the Orthogonal code sequences currently employed by the target base station where the selected code sequence is comprised of a repetition of a code sequence that is orthogonal to other code sequences currently employed by the target base station and the length of the selected code is an integer multiple of the longest Orthogonal code sequences currently employed by the target base station.

19. The mobile unit of claim 14, wherein the means for synchronizing the Orthogonal code sequence includes:

a. means for determining the Orthogonal code sequence boundary for the active base station's pilot signal; and

b. means for determining the Orthogonal code sequence boundary for the target base station's pilot signal from the determined active base station's pilot signal Orthogonal code sequence boundary.

20. The mobile unit of claim 17, the mobile unit further comprising means for determining the power of the received base station pilot signal sequence.

21. The mobile unit of claim 20, the mobile unit further comprising means for providing the ratio of the determined pilot signal power and interference density to the active base station.

22. The mobile unit of claim 14, wherein the means for determining the interference density includes:

means for correlating the received signal with a corresponding P/N sequence of the target base station;

means for correlating a pilot Orthogonal code sequence with the target base station's P/N correlated signal;

means for determining the power of the target base station's P/N correlated signal; and

means for determining the energy of the Orthogonally correlated, P/N correlated, received signal.

23. The mobile unit of claim 22, wherein the Orthogonal code sequence is a Walsh code sequence.

24. The mobile unit of claim 23, wherein the cellular network is a CDMA based network and each base station of the plurality of base stations represents a network cell.

25. The mobile unit of claim 24, wherein the means for synchronizing the Orthogonal code sequence includes:

a. means for determining the Orthogonal code sequence boundary for the active base station's pilot signal; and

b. means for determining the Orthogonal code sequence boundary for the target base station's pilot signal from the determined active base station's pilot signal Orthogonal code sequence boundary.

26. The mobile unit of claim 25, the mobile unit further comprising means for providing the ratio of the determined pilot signal power and interference density to the active base station.

27. A method communicating data signals using a spread spectrum cellular network, the cellular network including a plurality of base stations coupled to the cellular network and a mobile unit is assigned to one of the plurality of base stations (active base station), the method comprising the steps of:

a) receiving a signal of another of the plurality of base stations (target base station); and

b) determining the interference density to the target base station from the received signal including the step of:

i) synchronizing an Orthogonal code sequence with the Orthogonal code sequence boundary of the target base station's pilot sequence.

28. The method of claim 27, the step of determining the interference density further includes the steps of:

correlating the received signal with a corresponding P/N sequence of the target base station;

correlating the selected Orthogonal code sequence with the P/N correlated target pilot sequence of the target base station; and

determining the energy of the Orthogonally correlated, P/N correlated, target pilot sequence.

29. The method of claim 28, wherein the Orthogonal code sequence is a Walsh code sequence.

30. The method of claim 29, wherein the cellular network is a CDMA based network and each base station of the plurality of base stations represents a network cell.

31. The method of claim 30, wherein the step of determining the interference density further includes the step of selecting a code sequence that is at least quasi-orthogonal to the Orthogonal code sequences currently employed by the target base station where the selected code sequence is comprised of a repetition of a code sequence that is orthogonal to other code sequences currently employed by the target base station and the length of the selected code is an integer multiple of the longest Orthogonal code sequences currently employed by the target base station.

32. The method of claim 27, wherein the step of synchronizing the Orthogonal code sequence includes the steps of:

a. determining the Orthogonal code sequence boundary for the active base station's pilot signal; and

b. determining the Orthogonal code sequence boundary for the target base station's pilot signal from the determined active base station's pilot signal Orthogonal code sequence boundary.

33. The method of claim 30, further comprising the step of determining the power of the received base station pilot signal sequence.

34. The method of claim 33, further comprising the step of providing the ratio of the determined pilot signal power and interference density to the active base station.

35. The method of claim 27, wherein the step of determining the interference density includes the steps of:

correlating the received signal with a corresponding P/N sequence of the target base station;

correlating a pilot Orthogonal code sequence with the target base station's P/N correlated signal;

determining the power of the target base station's P/N correlated signal; and

determining the energy of the Orthogonally correlated, P/N correlated, received signal.

36. The method of claim 35, wherein the Orthogonal code sequence is a Walsh code sequence.

37. The method of claim 36, wherein the cellular network is a CDMA based network and each base station of the plurality of base stations represents a network cell.

38. The method of claim 37, wherein the step of synchronizing the Orthogonal code sequence includes the steps of:

a. determining the Orthogonal code sequence boundary for the active base station's pilot signal; and

b. determining the Orthogonal code sequence boundary for the target base station's pilot signal from the determined active base station's pilot signal Orthogonal code sequence boundary.

39. The method of claim 38, further comprising the step of providing the ratio of the determined pilot signal power and interference density to the active base station.

40. An article of manufacture for use in a mobile unit communicating data signals using a spread spectrum cellular network, the cellular network including a plurality of base stations coupled to the cellular network and the mobile unit is assigned to one of the plurality of base stations (active base station), the article of manufacture comprising

computer readable storage media including program logic embedded therein that causes control circuitry to perform the steps of:

a) receiving a signal of another of the plurality of base stations (target base station); and

b) determining the interference density to the target base station from the received signal including the step of:

i) synchronizing an Orthogonal code sequence with the Orthogonal code sequence boundary of the target base station's pilot sequence.

41. The article of manufacture of claim 40, the step of determining the interference density further includes the steps of:

correlating the received signal with a corresponding P/N sequence of the target base station;

correlating the selected Orthogonal code sequence with the P/N correlated target pilot sequence of the target base station; and

determining the energy of the Orthogonally correlated, P/N correlated, target pilot sequence.

42. The article of manufacture of claim 41, wherein the Orthogonal code sequence is a Walsh code sequence.

43. The article of manufacture of claim 42, wherein the cellular network is a CDMA based network and each base station of the plurality of base stations represents a network cell.

44. The article of manufacture of claim 43, wherein the step of determining the interference density further includes the step of selecting a code sequence that is at least quasi-orthogonal to the Orthogonal code sequences currently employed by the target base station where the selected code sequence is comprised of a repetition of a code sequence that is orthogonal to other code sequences currently employed by the target base station and the length of the selected code is an integer multiple of the longest Orthogonal code sequences currently employed by the target base station.

45. The article of manufacture of claim 40, wherein the step of synchronizing the Orthogonal code sequence includes the steps of:

a. determining the Orthogonal code sequence boundary for the active base station's pilot signal; and

b. determining the Orthogonal code sequence boundary for the target base station's pilot signal from the determined active base station's pilot signal Orthogonal code sequence boundary.

46. The article of manufacture of claim 43, further comprising the step of determining the power of the received base station pilot signal sequence.

47. The article of manufacture of claim 46, further comprising the step of providing the ratio of the determined pilot signal power and interference density to the active base station.

48. The article of manufacture of claim 40, wherein the step of determining the interference density includes the steps of:

correlating the received signal with a corresponding P/N sequence of the target base station;

correlating a pilot Orthogonal code sequence with the target base station's P/N correlated signal;

determining the power of the target base station's P/N correlated signal; and

determining the energy of the Orthogonally correlated, P/N correlated, received signal.

49. The article of manufacture of claim 48, wherein the Orthogonal code sequence is a Walsh code sequence.

50. The article of manufacture of claim 49, wherein the cellular network is a CDMA based network and each base station of the plurality of base stations represents a network cell.

51. The article of manufacture of claim 50, wherein the step of synchronizing the Orthogonal code sequence includes the steps of:

a. determining the Orthogonal code sequence boundary for the active base station's pilot signal; and

b. determining the Orthogonal code sequence boundary for the target base station's pilot signal from the determined active base station's pilot signal Orthogonal code sequence boundary.

52. The article of manufacture of claim 51, further comprising the step of providing the ratio of the determined pilot signal power and interference density to the active base station.